

Sub B1

(Amended Once) A system, comprising:

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a computer configured to determine a position and shape of an object of interest from video images and to characterize activity of said object of interest based on analysis of changes in said position and said shape over time.

Sub B2

16. (Amended Once) A method of characterizing activity of an object using a computer, comprising:

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detecting a foreground object of interest in video images;
tracking said foreground object over a plurality of said video images;
classifying said foreground object in said plurality of video images; and
characterizing said activity of said foreground object based on comparison of said classifications to activity of a standard object.

Sub C1

36. (Amended once) A method for background subtraction of a video image, comprising the steps of:

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grouping a number of images into a set of video images;
creating a standard deviation map of the grouped images;
removing a bounding box area of said image where variation is above a predetermined threshold to create a partial image; and
combining said partial image with an existing set of partial images by averaging the set of images to generate a complete background image depleted of a desired foreground object.

Please add the following claims:

43. (New) A method using computer processing of video images, comprising:
detecting an object of interest in a plurality of video images;
tracking said object over said plurality of video images;
classifying the state of said object in said plurality of images;
inputting a plurality of said classified states of said object into a characterization algorithm; and
outputting a characterization of said object based at least in part on said plurality of classified states.

44. (New) The method of claim 43, wherein the characterization algorithm comprises an algorithm selected from the group of algorithms consisting of Hidden Markov Modeling, rule-based label analysis, token parsing, and comparison to standard objects.

45. (New) The method of claim 43, wherein said characterization of said object indicates whether said plurality of classified states is normal, abnormal or new.

46. (New) The method of claim 43, wherein said plurality of video images is a subset of available video images.

47. (New) The method of claim 43, wherein said object is a biological mouse.

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48. (New) The method of claim 43, wherein said classified states comprise vertical position side view, horizontal position side view, vertical position front view, horizontal position front view, uddled up, partially reared, and moving.

REMARKS

The Examiner is thanked for the performance of a thorough search.

Claims 1-5, 10-24, 26-29 and 31-33 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,072,903 by Maki et al. ("Maki"). Claims 6-9, 25 and 30 stand rejected under 35 U.S.C. §103(a) as unpatentable over Maki in view of U.S. patent No. 6,263,088 by Crabtree et al. ("Crabtree"). Claims 34-42 stand rejected under 35 U.S.C. §103(a) as unpatentable over Maki in view of Crabtree and U.S. Patent No. 5,870,138 by Smith et al. ("Smith"). Applicants respectfully traverse. For the following reasons, Applicants respectfully request reconsideration and withdrawal of the claim rejections.

Only claims 1, 16, 36 and 39 are independent. For the Examiner's convenience, the independent claim not amended or added above is restated herein, as follows:

39. (Reiterated) A system, comprising:

a computer configured to detect and characterize at least a single behavior of an object of interest based on movement of said object, using video image analysis.

In the Office Action, the Examiner has proposed that Maki renders claims 1 and 16 unpatentable under 35 U.S.C. §102(e). To anticipate a claim, the cited reference must